

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today
(1) was not written for publication in a law journal and
(2) is not binding precedent of the Board.

Paper No. 31

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KOICHI TODA
and YOSHIO OGAWA

Appeal No. 96-2168
Application 08/257,478¹

ON BRIEF

Before HAIRSTON, JERRY SMITH and HECKER, Administrative Patent Judges.

HECKER, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final

¹ Application for patent filed June 09, 1994. According to the appellants, this application is a continuation of Application 08/040,893, filed March 31, 1993, which is now abandoned.

rejection of claims 1 through 17, all of the claims pending in the present application.

The invention relates to a control device for controlling a plurality of motors in an air conditioner, e.g. a blower motor and a compressor motor. A single microcomputer controls the rotation of each motor by generating the driving signals for each motor. The driving signals are dependent on a respective position detection signal from each motor, and drive respective inverter circuits for each motor.

Representative independent claim 1 is reproduced as follows:

1. A motor control device comprising: a plurality of motors for driving respective loads; a microcomputer for controlling the plurality of motors; position detecting means for detecting a respective position of a rotor of each of the motors and outputting a respective position signal dependent thereon; drive means for individually driving each of the motors, each drive means including switch means for switching a connection between a DC power supply and a respective motor; drive signal generating means for generating respective drive signals for individually driving the respective motors in response to corresponding position signals for each motor inputted from the position detecting means to the microcomputer, whereby the respective drive signals are effective to selectively drive the switch means of the respective drive means so that rotors of respective motors are rotated in response to corresponding position signals, the connection between the DC power supply and the respective motors is switched so that a DC voltage from the DC power

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supply is converted into an AC voltage, which is applied to rotate rotors of the motors; chopping signal generating means for generating chopping signals each having a predetermined period for combining with respective drive signals for selectively driving means of the respective drive means, the chopping signals having a higher frequency than that of the drive signals; wherein respective chopping signals and drive signals are output by the microcomputer to the respective drive means to convert the DC voltage to an AC voltage and to effect voltage chopping, and the chopped AC voltage is applied to respective motors to control the rotation frequency of rotors of the motors.

The Examiner relies on the following references:

Karlin et al. (Karlin)	3,600,655	Aug. 17, 1971
Nam	5,210,684	May 11, 1993 (filed Dec. 18, 1991)
Yamaguchi et al. (Yamaguchi)	5,373,436	Dec. 13, 1994 (filed June 30, 1992)

Claims 1 through 3, 6, 13, 16 and 17 stand rejected under 35 U.S.C. § 103 as being unpatentable over Karlin and Yamaguchi. Claims 4, 5 and 7 through 12 stand rejected under 35 U.S.C. § 103 as being unpatentable over Karlin and Yamaguchi in view of Nam. Claims 14 and 15 stand rejected under 35 U.S.C. § 102 and being anticipated by Karlin.

Rather than reiterate the arguments of Appellants and the Examiner, reference is made to the brief and answer for the respective details thereof.

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OPINION

After a careful review of the evidence before us we will not sustain the rejection of claims 1 through 13, 16 and 17 under 35 U.S.C. § 103, nor the rejection of claims 14 and 15 under 35 U.S.C. § 102.

35 U.S.C. § 103 Rejections

The Examiner has failed to set forth a ***prima facie*** case. It is the burden of the Examiner to establish why one having ordinary skill in the art would have been led to the claimed invention by the reasonable teachings or suggestions found in the prior art, or by a reasonable inference to the artisan contained in such teachings or suggestions.

In re Sernaker, 702 F.2d 989, 995, 217 USPQ 1, 6
(Fed. Cir. 1983).

With regard to the rejection of independent claim 1 under 35 U.S.C. § 103 as being unpatentable over Karlin and Yamaguchi, Appellants argue that "in all embodiments of the present invention the microcomputer serves as the driving

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signal generating means for individually driving each of a plurality of motors,... Contrastingly, Karlin lacks any disclosure or suggestion of a microcomputer controller for generating driving signals in a plural motor driven system." (Brief at the bottom of page 17).

Looking at claim 1 we see "a microcomputer for controlling the plurality of motors;" (lines 2 and 3), "drive signal generating means for generating respective drive signals for individually driving the respective motors..." (lines 9 and 10) and "wherein respective ... drive signals are output by the microcomputer..." (lines 25 and 26). Clearly, a microcomputer is claimed for generating drive signals for all motors.

A thorough inspection of the Examiner's Answer gives no clue as to how Karlin and/or Yamaguchi meet this limitation. The Examiner's response to Appellants' arguments recites that Karlin's drive signal generating means is met by "multiphase generators 63a, 63b etc." (answer at page 6). However, as noted by Figure 3 of Karlin, this represents a separate drive signal generator for each motor, as opposed to

the single (microcomputer) generator claimed. And further, no single microcomputer can be found in Karlin. Even if certain circuitry of Karlin could be considered equivalent to a microcomputer, one would end up with an equivalent microcomputer for each motor rather than a single equivalent microcomputer. The only control circuit common to all motors of Karlin is the variable frequency oscillator 55. We do not consider oscillator 55 to be equivalent to a microcomputer.

Yamaguchi discloses a controller 30 which generates drive signals and the Examiner proposes to combine Yamaguchi with Karlin to obtain the aspects of Pulse Width Modulation. Controller 30 may be a microprocessor, see column 4, lines 54 and 55. Assuming Yamaguchi's microprocessor is equivalent to a microcomputer², and there is sufficient rationale to combine

² According to the Dictionary of Computers, Information Processing & Telecommunications, pages 382 and 384, (1987), a microprocessor is part of a microcomputer, a microcomputer contains a microprocessor and more.

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Yamaguchi with Karlin, the expected result would be a microcomputer for each motor, not one microcomputer as claimed. Although there are many similarities between Karlin and the claimed invention (plural motors individually controlled in one system), dissimilar aspects of the claimed invention are not met. "Additionally, when determining obviousness, the claimed invention should be considered as a whole; there is no legally recognizable 'heart' of the invention." Para-Ordnance Mfg. v. SGS Importers Int'l, Inc., 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995), citing W. L. Gore & Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). For the above reasons, we will not sustain the rejection of claim 1, and likewise dependent claims 2, 3, 6 and 13, dependent therefrom and subject to the same applied art.

Turning to the 35 U.S.C. § 103 rejection using the prior art of Karlin and Yamaguchi, as discussed supra, and further in view of Nam, we will first look at claims 4 and 5, since they depend from claim 1. The critical issue is,

does the addition of Nam to the combination of references now meet the limitations of claim 1. In Figure 1 of Nam we see a control portion 2. Control portion 2 appears to be a microprocessor, note column 1, lines 21-24 and 63-64.

Assuming this microprocessor is equivalent to the claimed microcomputer, we note that it provides control signals (i.e. drive signals) to an inverter drive portion 6, which applies signals to the transistors of inverter 7, to run the compressor 8 (Nam at column 2, lines 35-40). This is akin to Appellants' Figure 1 wherein microcomputer 20 is met by Nam's control portion 2, Appellants' first transistor drive circuit 24 is met by Nam's drive portion 6, and Appellants' drive circuit 5 is met by Nam's inverter 7. However, Nam's blower motor is controlled by portion 11 (column 2 lines 47-50), in much the same way Appellants' prior art figure 11 depicts brushless motor control 14. We find no evidence in Nam that its microprocessor provides drive signals for blower motor speed control, and therefore also fails to teach the single microcomputer drive signal generator for plural motors recited in claim 1. For these reasons we will

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not sustain the rejection of claims 4 and 5, dependent from claim 1.

The Examiner applied the same combination of references (Karlin, Yamaguchi and Nam) in rejecting claims 7 through 12. Independent claim 7 (at lines 15-17) recites "a single controlling means for controlling the rotation of each of the condenser motor and the blower motor by generating the plurality of driving signals" (emphasis added). As noted above, these references, singularly or in combination, do not teach a single controller, i.e., microcomputer, for generating the drive signals for all motors. Therefore we will not sustain the rejection of independent claim 7, and likewise claims 8 through 12 dependent therefrom.

35 U.S.C. § 102 Rejection

At first glance, Karlin appears to meet all the limitations of claims 14 and 15. It is axiomatic that anticipation of a claim under § 102 can be found only if the prior art reference discloses every element of the claim.

See In re King, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986) and Lindemann Maschinenfabrik GMBH v.

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American Hoist & Derrick Co., 730 F.2d 1452, 1458, 221 USPQ
481, 485
(Fed. Cir. 1984).

Appellants argue that their "means-plus-function
language must be construed to cover only the structure
described in the specification, and equivalents thereof, to
the extent that the specification provides such disclosure.
In re Donaldson Co., 16 F.3d 1189, 1194, 29 USPQ2d 1845, 1849
(Fed. Cir. 1994)." (Brief at page 21).

Looking at claim 14, lines 8 and 11 we see "driving
signal generating means for generating driving signals for
each respective motor in accordance with the detected
frequency of the respective motors." Appellants urge that the
"driving signal generating means" is the single microcomputer
in their specification. We note that functional language
follows this "means for" language of the claim and Appellants
are entitled to rely on their disclosure for thus limiting the
broadest reasonable interpretation during prosecution. We
also note that Appellants have disclosed no equivalents of
their microcomputer and thereby argue that claim 14 must be

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read as claiming a single microcomputer as their "driving signal generating means" under 35 U.S.C. § 112 paragraph 6. The Examiner's answer does not address this issue (therefore has not disputed this paragraph 6 interpretation). In accordance with the above reasoning, and that we have found Karlin does not meet this limitation in our review of the 35 U.S.C. § 103 rejections supra, we will not sustain the rejection of claim 14, and thereby the rejection of 15 through 17, dependent therefrom.

We have not sustained the rejection of claims 1 through 13, 16 and 17 under 35 U.S.C. § 103; nor have we sustained the rejection of claims 14 and 15 under 35 U.S.C. § 102. Accordingly, the Examiner's decision is reversed.

REVERSED

Kenneth W. Hairston)
Administrative Patent Judge)
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)	BOARD OF PATENT
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